

This listing of claims will replace all prior versions, and listings, of claims in the application:

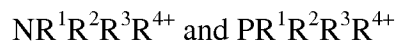
**Listing of Claims:**

1. (Currently Amended) A process for the selective hydrogenation of ~~at least one diolefinic compound~~ 1, 3-butadiene contained in a feed, comprising the passage of a feed containing ~~at least one diolefinic compound~~ 1, 3-butadiene in contact with a liquid catalyst composition, characterized in that said liquid catalyst composition comprises at least one salt of a transition metal from groups IB, IIB, VB, VIB, VIIB and VIII of the periodic table, at least one ligand and at least one organometallic reducing agent, said contact resulting in a conversion of said 1, 3-butadiene to primarily cis-2-butene.
2. (Original) A process according to claim 1, characterized in that:
  - the transition metal salt is selected from halides, acetylacetonates and carboxylates of organic acids containing 2 to 25 carbon atoms;
  - the reducing agent is selected from organometallic derivatives of at least one metal selected from the group formed by lithium, sodium and aluminium;
  - the ligand is selected from derivatives of phosphorus, arsenic and antimony and nitrogen-containing ligands.
3. (Currently Amended) A process according to claim 2, wherein the transistion metal salt is characterized in that the ~~acarboxylate is~~ selected from acetates, octoates, decanoates, naphthenates, stearates, palmitates, oleates and benzoates.
4. (Previously Presented) A process according to claim 1, characterized in that the transition metal salt is selected from salts of metals from groups IB, IIB, VIB and VIII of the periodic table.

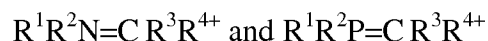
5. (Original) A process according to claim 4, characterized in that the transition metal salt is selected from copper, zinc, chromium, molybdenum, iron, cobalt, nickel, ruthenium and palladium salts.
6. (Original) A process according to claim 5, characterized in that the transition metal salt is selected from iron salts.
7. (Currently Amended) A process according to claim 1, characterized in that the reducing agent-reactor is selected from:
  - organoaluminas with general formula  $AlR_y(X)_{3-y}$ , in which R is an alkyl group, X is a halide and  $y=1, 2$  or  $3$ ;
  - magnesias with formula  $MgR_2$ , in which R is as defined above;
  - aluminoxanes;
  - sodium borohydride; and
  - alkaline hydrides and their substitution derivatives comprising 1, 2 or 3 alkoxy groups.
8. (Previously Presented) A process according to claim 1, characterized in that the ligand derived from phosphorus, arsenic or antimony is selected from ligands with general formulae:
 
$$YR_mX_{3-m}, YR_3, R_2Y-(CH_2)_nYR_2, Y(OR)_3 \text{ and } YOR_3,$$
 in which  $Y=P, As$  or  $Sb$ ,  $m=0, 1, 2$  or  $3$ ;  $R = \text{alkyl, aryl or substituted aryl}$ ;  $X = \text{halogen}$ , and  $n=0, 1, 2, 3$  or  $4$ .
9. (Previously Presented) A process according to Claim 1, characterized in that the

nitrogen-containing ligand is selected from amines, polyamines, imidazole, substituted imidazoles, pyrrole, substituted pyrroles, pyrazoles, amide derivatives, imines, diimines and pyridine derivatives.

10. (Previously Presented) A process according to claim 1 characterized in that a minor proportion of at least one salt of a further transition metal selected from metals from groups IB, VB, VIB, VIIB and VIII is added to the catalyst.
11. (Original) A process according to claim 10, characterized in that the principal metal is iron and the additional metal is selected from Co, Ni, Cu, Rh, Pd, Mn, Mo, W and V.
12. (Currently Amended) A process according to claim 1, characterized in that the catalyst composition ~~it~~ is dissolved in at least one organic compound selected from aliphatic or aromatic hydrocarbons, ethers, esters, halogenated hydrocarbons, sulfoxides and amides.
13. (Currently Amended) A process according to claim 1, characterized in that the catalyst composition ~~it~~ is dissolved in at least one ionic liquid with general formula  $Q^+ A^-$  in which  $Q^+$  represents a quaternary ammonium and/or quaternary phosphonium ion and  $A^-$  represents any anion which is capable of forming a liquid salt at low temperatures, i.e. below 90°C.
14. (Original) A process according to claim 13, characterized in that the quaternary ammonium and/or phosphonium ion  $Q^+$  has one of the following general formulae:

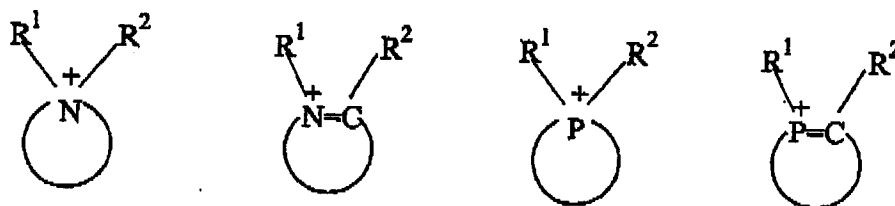


or one of general formulae:



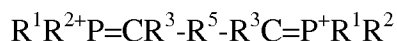
in which  $R^1$ ,  $R^2$ ,  $R^3$  and  $R^4$ , which may be identical or different, each represent hydrogen, the cation  $NH_4^+$  being excluded for  $NR^1R^2R^3R^4+$ , or a hydrocarbyl residue containing 1 to 30 carbon atoms.

15. (Original) A process according to claim 13, characterized in that the quaternary ammonium and/or phosphonium ion  $Q^+$  derives from a nitrogen-containing or phosphorus-containing heterocycle comprising 1, 2 or 3 nitrogen or phosphorus atoms, having one of the following general formulae:



in which the cycles are constituted by 4 to 10 atoms and  $R^1$  and  $R^2$ , which may be identical or different, each represent hydrogen or a hydrocarbyl residue containing 1 to 30 carbon atoms.

16. (Original) A process according to claim 13, characterized in that the quaternary ammonium and/or phosphonium ion has one of the following formulae:



in which  $R^1$ ,  $R^2$  and  $R^3$ , which may be identical or different, each represent hydrogen or a hydrocarbyl residue containing 1 to 30 carbon atoms and  $R^5$  represents an alkylene or phenylene residue.

17. (Previously Presented) A process according to claim 1, characterized in that the mole

- ratio between the ligand and the transition metal salt is in the range 0.5/1 to 10/1.
18. (Previously Presented) A process according to claim 1, characterized in that the ligand is monocoordinating and the ligand/transition metal salt mole ratio is 2/1 to 3/1.
  19. (Previously Presented) A process according to claim 1, characterized in that the ligand is bi-coordinating and the ligand/transition metal salt mole ratio is 1/1 to 1.5/1.
  20. (Previously Presented) A process according to claim 1, characterized in that the mole ratio between the reducing agent and the transition metal salt is 1/1 to 15/1.
  21. (Currently Amended) A process according to claim 1, characterized in that said catalyst composition is employed in a proportion corresponding to a proportion of metallic compounds in the reaction medium of 10 to 10000 ppm by weight.
  22. (Canceled)
  23. (Currently Amended) An integrated process for producing 1-butene from a 1-butene rich C<sub>4</sub> cut, characterized in that it comprises, as the finishing step, selective hydrogenation of 1,3-butadiene carried out using a process according to claim ~~22~~1 to obtain a 1,3-butadiene content of less than 10 ppm by weight.
  24. (New) A process according to claim 1 conducted under conditions resulting in a selectivity of cis-2-butene of over 98% for an 80% 1, 3-butadiene conversion.
  25. (New) A process according to claim 24 wherein the catalyst comprises an iron salt and the ligand is an imino compound.